

Mr. Michael Lutheran  
Kobelco Metal Powder of America, Inc.  
1625 Bateman Drive  
Seymour, Indiana 47274

Re: Significant Source Modification No:  
**071-12450-00016**

Dear Mr. Lutheran:

Kobelco Metal Powder of America, Inc. applied for a Part 70 operating permit on December 2, 1996 for a metal powder manufacturing operation. An application to modify the source was received on April 28, 2000. Pursuant to 326 IAC 2-7-10.5 (Source Modifications) and 326 IAC 2-2, 40 CFR 52.21, and 40 CFR 52.124 (Prevention of Significant Deterioration) the CO emission limits for the following emission units are approved to be revised:

- (a) one (1) natural gas fired reduction/annealing furnace (RF-1), processing a maximum of 6.0 tons of semi-finished steel powder per hour, exhausting through one (1) stack (S-4); and
- (b) one (1) natural gas fired reduction/annealing furnace (RF-2), processing a maximum of 5.0 tons of semi-finished steel powder per hour, exhausting through one (1) stack (S-5).

The proposed Significant Source Modification approval will be incorporated into the pending Part 70 permit application pursuant to 326 IAC 2-7-10.5(l)(3).

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call Trish Earls at (973) 575-2555, ext. 3219, or call (800) 451-6027, press 0 and ask for extension 3-6878.

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Management

Attachments  
TE/EVP

cc: File - Jackson County  
U.S. EPA, Region V  
Jackson County Health Department  
Air Compliance Section Inspector Joe Foyst  
Compliance Data Section - Karen Nowak  
Administrative and Development - Janet Mobley  
Technical Support and Modeling - Michelle Boner

# **PART 70 SIGNIFICANT SOURCE MODIFICATION OFFICE OF AIR MANAGEMENT**

**Kobelco Metal Powder of America, Inc.  
1625 Bateman Drive  
Seymour, Indiana 47274**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

This approval is also issued under the provisions of 326 IAC 2-2, 40 CFR 52.21, and 40 CFR 52.124 (Prevention of Significant Deterioration), with conditions listed on the attached pages.

Source Modification No.: 071-12450-00016	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

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## SECTION A

## SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the emission units contained in conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

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The Permittee owns and operates a stationary metal powder manufacturing operation.

Responsible Official:	Michael Lutheran
Source Address:	1625 Bateman Drive, Seymour, Indiana 47274
Mailing Address:	1625 Bateman Drive, Seymour, Indiana 47274
Phone Number:	812-522-3033
SIC Code:	3311A
County Location:	Jackson
County Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program
	Major Source, under PSD Rules

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

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This stationary source is approved to revise the CO emission limits for the following emission units and pollution control devices:

- (a) one (1) natural gas fired reduction/annealing furnace (RF-1), processing a maximum of 6.0 tons of semi-finished steel powder per hour, exhausting through one (1) stack (S-4); and
- (b) one (1) natural gas fired reduction/annealing furnace (RF-2), processing a maximum of 5.0 tons of semi-finished steel powder per hour, exhausting through one (1) stack (S-5).

### A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

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This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

## **SECTION B                      GENERAL CONSTRUCTION CONDITIONS**

### **B.1      Permit No Defense [IC 13]**

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This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

### **B.2      Definitions [326 IAC 2-7-1]**

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Terms in this approval shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2 and 326 IAC 2-7 shall prevail.

### **B.3      Effective Date of the Permit [40CFR 124]**

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Pursuant to 40 CFR 124.15, 40 CFR 124.19, and 40 CFR 124.20, the effective date of this permit will be thirty-three (33) days after issuance.

### **B.4      Revocation of Permits [326 IAC 2-2-8]**

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Pursuant to 326 IAC 2-2-8(a)(1), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of eighteen (18) months or more.

### **B.5      Significant Source Modification [326 IAC 2-7-10.5(h)]**

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This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:

- (a)      If the Title V draft permit has not gone on public notice, then the change/addition covered by the Significant Source Modification will be included in the Title V draft.
- (b)      If the Title V permit has gone thru final EPA proposal and would be issued ahead of the Significant Source Modification, the Significant Source Modification will go thru a concurrent 45 day EPA review. Then the Significant Source Modification will be incorporated into the final Title V permit at the time of issuance.
- (c)      If the Title V permit has not gone thru final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Title V permit, and the Title V permit will issued after EPA review.

## SECTION C GENERAL OPERATION CONDITIONS

### C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

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- (a) Where specifically designated by this approval or required by an applicable requirement, any application form, report, or compliance certification submitted under this approval shall contain certification by a responsible official of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, on the attached Certification Form, with each submittal.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

### C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

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- (a) If required by specific condition(s) in Section D of this approval, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after issuance of this approval, including the following information on each facility:
  - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
  - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
  - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If due to circumstances beyond its control, the PMP cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Management  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM, OAM, upon request and shall be subject to review and approval by IDEM, OAM. IDEM, OAM, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

### C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

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- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this approval.
- (b) Any application requesting an amendment or modification of this approval shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

**C.4 Opacity [326 IAC 5-1]**

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Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this approval:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

**C.5 Operation of Equipment [326 IAC 2-7-6(6)]**

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Except as otherwise provided in this approval, all air pollution control equipment listed in this approval and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

**Testing Requirements [326 IAC 2-7-6(1)]**

**C.6 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]**

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- (a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAM.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAM within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAM, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

#### **Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]**

##### **C.7 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]**

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- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this approval exceed the level specified in any condition of this approval, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAM within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM reserves the authority to use enforcement activities to resolve noncompliant stack tests.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAM that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate approval conditions may be grounds for immediate revocation of the approval to operate the affected facility.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

#### **Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

##### **C.8 Monitoring Data Availability [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)]**

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- (a) With the exception of performance tests conducted in accordance with Section C- Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this approval shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this approval is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this approval.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.



- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.9 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAM, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Records of required monitoring information shall include, where applicable:
  - (1) The date, place, and time of sampling or measurements;
  - (2) The dates analyses were performed;
  - (3) The company or entity performing the analyses;
  - (4) The analytic techniques or methods used;
  - (5) The results of such analyses; and
  - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
  - (1) Copies of all reports required by this approval;
  - (2) All original strip chart recordings for continuous monitoring instrumentation;
  - (3) All calibration and maintenance records;
  - (4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this approval, and whether a deviation from an approval condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.

- (d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of approval issuance.

C.10 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

- (a) The reports required by conditions in Section D of this approval shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

- (b) Unless otherwise specified in this approval, any notice, report, or other submission required by this approval shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, on or before the date it is due.
- (c) Unless otherwise specified in this approval, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (d) The first report shall cover the period commencing on the date of issuance of this approval and ending on the last day of the reporting period.

## SECTION D.1 FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-7-5(15)]

- (a) one (1) natural gas fired reduction/annealing furnace (RF-1), processing a maximum of 6.0 tons of semi-finished steel powder per hour, exhausting through one (1) stack (S-4); and
- (b) one (1) natural gas fired reduction/annealing furnace (RF-2), processing a maximum of 5.0 tons of semi-finished steel powder per hour, exhausting through one (1) stack (S-5).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

#### D.1.1 Prevention of Significant Deterioration [326 IAC 2-2] [40 CFR 52.21]

The CO limits as determined pursuant to 326 IAC 2-2-3(2) BACT in CP-071-2546-00110, issued on December 10, 1993, are being corrected from limits of 35.0 lb/MMscf of natural gas burned and 0.7 pound per hour (3.0 tons per year) for RF-1 and 20 lb/MMscf of natural gas burned and 0.2 pound per hour (0.8 ton per year) for RF-2, to the following limits for RF-1 and RF-2 as determined pursuant to the BACT analysis submitted on February 3, 1999:

- (a) CO emissions from RF-1 shall not exceed 1.0 pound of CO per ton of semi-finished steel powder; and
- (b) CO emissions from RF-2 shall not exceed 1.0 pound of CO per ton of semi-finished steel powder.

This condition supersedes condition 10b from CP-071-2546-00110, issued on December 10, 1993.

### Compliance Determination Requirements

#### D.1.2 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

During the period between 30 and 36 months after issuance of this permit, the Permittee shall perform CO testing utilizing Method 10 (40 CFR 60, Appendix A) for CO, or other methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR MANAGEMENT  
COMPLIANCE DATA SECTION**

**PART 70 SOURCE MODIFICATION  
CERTIFICATION**

Source Name: Kobelco Metal Powder of America, Inc.  
Source Address: 1625 Bateman Drive, Seymour, Indiana 47274  
Mailing Address: 1625 Bateman Drive, Seymour, Indiana 47274  
Source Modification No.: 071-12450-00016

**This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.**

Please check what document is being certified:

- 9 Test Result (specify) \_\_\_\_\_
- 9 Report (specify) \_\_\_\_\_
- 9 Notification (specify) \_\_\_\_\_
- 9 Other (specify) \_\_\_\_\_

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

## **Indiana Department of Environmental Management Office of Air Management**

### **Technical Support Document (TSD) for a Part 70 Significant Source Modification**

#### **Source Background and Description**

<b>Source Name:</b>	<b>Kobelco Metal Powder of America, Inc.</b>
<b>Source Location:</b>	<b>1625 Bateman Drive, Seymour, Indiana 47274</b>
<b>County:</b>	<b>Jackson</b>
<b>SIC Code:</b>	<b>3311A</b>
<b>Source Modification No.:</b>	<b>071-12450-00016</b>
<b>Permit Reviewer:</b>	<b>Trish Earls/EVP</b>

The Office of Air Management (OAM) has reviewed a modification application from Kobelco Metal Powder of America, Inc. relating to the operation of a metal powder manufacturing operation.

#### **History**

On April 28, 2000, Kobelco Metal Powder of America, Inc. submitted an application to the OAM requesting that the existing CO emission limits for the two (2) reduction/annealing furnaces (ID Nos. RF-1 and RF-2) established in CP-071-2546-00110 (a PSD permit), issued to this source on December 10, 1993, pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), be changed to 1.0 pound CO per ton of steel powder processed for each furnace.

On December 2, 1996, Kobelco Metal Powder of America, Inc. applied for a Part 70 Permit (T071-7315-00016). In the Part 70 Permit application, the source requested that these CO limits be changed from those established in CP-071-2546-00110 to 2.8 pounds CO per ton of steel powder processed. This requested change was reviewed under the Part 70 permit review process and was public noticed with the draft Part 70 permit from January 29, 2000 to February 28, 2000. A PSD Best Available Control Technology (BACT) and ambient air quality analysis was performed in the Part 70 review process in support of this change. Since the new CO emission limits that the source is now requesting for the two (2) reduction/annealing furnaces are more stringent than the revised limits that were originally reviewed in the Part 70 permit review, no further BACT analysis, ambient air quality analysis, or public comment is necessary. The PSD BACT review presented in the TSD for the draft Part 70 permit will also be included in this TSD for the Part 70 Significant Source Modification.

This CO emission limit change is being reviewed separately from the Part 70 permit review so that this emission limit can be established in a federally enforceable permit condition as soon as possible to avoid further exceedances of their existing PSD permit limits.

#### **Existing Approvals**

The source applied for a Part 70 Operating Permit on December 2, 1996. The source has been operating under previous approvals including, but not limited to, the following:

- (a) Construction Permit, PC (36) 1685, issued June 13, 1988;

- (b) Operation Permit, 36-02-93-0110, issued January 25, 1989;
- (c) Registration CP-071-2513-00016, issued June 1, 1992;
- (d) CP-071-2546-00110 (PSD Permit), issued December 10, 1993.

All applicable conditions from previous approvals were incorporated into this Part 70 Significant Source Modification except the following conditions, which have either been removed or revised:

- (a) CP-071-2546-00110 (PSD Permit), issued December 10, 1993.

Condition 10b: CO emissions shall not exceed 35.0 lb/MMscf of natural gas burned and 0.7 pounds per hour (3 tons/year).

Condition 11b: CO emissions shall not exceed 20 lb/MMscf of natural gas burned and 0.2 pounds per hour (0.8 tons/year).

Reason not incorporated: These conditions were based on the assumption that CO emissions from each of the reduction/annealing furnaces were generated by natural gas combustion only. Stack tests performed on the furnaces on June 30, 1998, showed that potential CO emissions from these furnaces were much higher because additional CO emissions are generated from the decarburization of the metal powder in the furnaces. Therefore, the CO emission limit will be revised through this Part 70 Significant Source Modification under the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration), 40 CFR 52.21, and 40 CFR 52.124, to include these additional CO emissions from decarburization. The revised limit for each furnace will be 1.0 pounds of CO per ton of steel powder processed.

### Enforcement Issue

There are no pending enforcement actions related to this modification.

### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
S-4	RF-1	31.3	3.8	20,900	524
S-5	RF-2	61.7	3.8	37,150	322

### Recommendation

The staff recommends to the Commissioner that the Significant Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on April 28, 2000.

### Emission Calculations

See Appendix A of this document for detailed emissions calculations (3 pages).

### Potential To Emit Before Controls (Modification)

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

Pollutant	Potential To Emit (tons/year)
PM	0.0
PM-10	0.0
SO <sub>2</sub>	0.0
VOC	0.0
CO	21.92
NO <sub>x</sub>	0.0

HAP's	Potential To Emit (tons/year)
N/A	N/A
TOTAL	N/A

### Justification for Modification

This Title V source is being modified through a Significant Source Modification. Since the CO limits for each of the reduction/annealing furnaces (RF-1 and RF-2), that were established pursuant to 326 IAC 2-2 (PSD), are being revised under the requirements of 326 IAC 2-2, the modification is subject to that rule. Therefore, this modification is being performed pursuant to 326 IAC 2-7-10.5(f)(1).

### County Attainment Status

The source is located in Jackson County.

Pollutant	Status
PM-10	attainment
SO <sub>2</sub>	attainment
NO <sub>2</sub>	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. Jackson County has been designated as attainment or unclassifiable for ozone.

### Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	less than 100
PM-10	less than 100
SO <sub>2</sub>	less than 100
VOC	less than 100
CO	greater than 100
NO <sub>x</sub>	less than 100

- (a) This existing source is a major stationary source because an attainment regulated pollutant is emitted at a rate of 100 tons per year or more, and it is one of the 28 listed source categories.
- (b) These emissions are based upon the pending Title V application (T071-7315-00016) received by IDEM, OAM on December 2, 1996 and subsequent submittals and correspondences.

#### Potential to Emit After Controls for the Modification

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units for the modification.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
RF-1 and RF-2 Future Potential Emissions	N/A	N/A	N/A	N/A	48.18	N/A	N/A
RF-1 and RF-2 Average Actual Emissions	N/A	N/A	N/A	N/A	26.26	N/A	N/A
Total Emissions	N/A	N/A	N/A	N/A	21.92	N/A	N/A
PSD Significant Threshold	25	15	40	40	100	40	N/A

Note: Potential emissions are the future potential emissions minus the average actual emissions for the past two years (1998 and 1999).

This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. However, since the CO emission limits for RF-1 and RF-2 established pursuant to 326 IAC 2-2 (PSD) are being revised, the PSD requirements apply.

#### Federal Rule Applicability



- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this modification.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this modification.

#### **State Rule Applicability - Entire Source**

##### **326 IAC 2-2 (Prevention of Significant Deterioration)**

This source is subject to the requirements of 326 IAC 2-2 (PSD), 40 CFR 52.21, and 40 CFR 52.124, because potential CO emissions after control are greater than 100 tons per year and it is one of the 28 listed source categories. Pursuant to this rule, this source was issued a PSD permit (CP-071-2546-00110) on December 10, 1993. The CO emission limits listed in Operation Conditions 10b and 11b of the PSD permit for the two (2) reduction/annealing furnaces (RF-1 and RF-2) were based on the assumption that CO emissions from each of the reduction/annealing furnaces were generated by natural gas combustion only. Stack tests performed on the furnaces on June 30, 1998, showed that potential CO emissions from these furnaces were much higher because additional CO emissions are generated from the decarburization of the metal powder in the furnaces. Therefore, the CO emission limit will be revised through this Part 70 Significant Source Modification, under the requirements of 326 IAC 2-2 (PSD), 40 CFR 52.21, and 40 CFR 52.124, to include these additional CO emissions from decarburization. The revised limit for each furnace will be 1.0 pound of CO per ton of steel powder processed.

A CO limit revision request was first presented in the Title V permit application (T071-7315-00016) submitted to IDEM on December 2, 1996, however the request was to revise the CO limit to 2.8 pounds per ton of steel powder processed for each of RF-1 and RF-2. During the Title V permit application review, at the OAM's request, Kobelco Metal Powder of America, Inc. submitted the following in support of the revised CO emission limits:

- (b) Descriptions of the requested adjustments and the reasons for the request;
- (b) An Ambient Air Quality Analysis which assesses the impacts of the requested adjustments on ambient air in the vicinity of the plants and at more distant locations; and
- (c) A consideration of CO control technologies as a supplement to the Best Available Control Technology (BACT) Analysis presented in the PSD Construction permit application.

Since the CO emission limit is now being revised to 1.0 pound CO per ton of steel powder processed, which is more stringent than 2.8 pounds CO per ton steel powder processed, the submitted materials are still valid to justify changing the limit. Therefore, the Ambient Air Quality Analysis and BACT analysis results as presented in the Technical Support Document (TSD) of the Title V draft permit, with some minor changes, are also presented below.

A review of the submitted items listed above yielded the following conclusions:

- (a) The CO emissions for each of the reduction/annealing furnaces provided in the original PSD construction permit application were based solely on the combustion of natural gas

and did not account for CO formed by the release of carbon from the steel powder (decarburization) into the reducing (oxygen deficient) atmosphere of the reduction/annealing furnace.

A CO emissions stack test was conducted in June, 1998. The CO emission rates measured during the test included the contributions from both the decarburization of the steel powder and the combustion of natural gas. It was determined that the CO emission rate from the decarburization of steel powder is approximately proportional to the semi-finished product input rate. The natural gas firing rate to achieve the required furnace temperature profile required for the desired annealing of the steel powder is approximately proportional to the semi-finished product weight. Consequently, the CO emission rate from natural gas combustion is approximately proportional to the semi-finished product input weight rate. Based on these proportionalities, the total CO emission rate resulting from both CO formation mechanisms (decarburization and natural gas combustion) is approximately proportional to the semi-finished product input rate.

The CO emission rates measured during the stack test were converted from pounds of CO per hour to units of pounds per ton of semi-finished product input. During the stack tests, six separate stack test runs were performed (three at each furnace) with both furnaces processing the same semi-finished product and producing the same finished product. The stack tests results for both furnaces were then combined into a single six-point data set for the purpose of statistical evaluation. This yielded the revised CO emission limit of 2.8 pounds of CO per ton of semi-finished product input to the reduction/annealing process. More recent testing on these furnaces demonstrates that this limit can be reduced to 1.0 pound of CO per ton of semi-finished product input to the reduction/annealing process.

- (b) The ambient air quality analysis for CO was performed by predicting the impacts of the proposed CO emission limits (at the time that the analysis was performed, this limit was 2.8 pounds of CO per ton of semi-finished steel powder processed) for the reduction/annealing furnaces, in conjunction with the estimated maximum CO emissions at other CO emission locations at the source, on ambient air concentrations of CO at off-site receptor locations using ambient air dispersion modeling. The predicted impacts from the source were then compared to Significant Impact Levels (SILs) for CO specified in 326 IAC 2-3-2(e), the Air Quality Monitoring Exemption Level specified in 326 IAC 2-2-4(b) for CO, and the National Ambient Air Quality Standards (NAAQS) for CO. Carbon monoxide was modeled using averaging periods corresponding to the NAAQS and the Indiana ambient air quality values. These averaging periods are 1-hour and 8-hour averages. The following table shows the results of the air dispersion modeling compared to the SILs, Exemption Level, and the NAAQS.

Meteoro-logical Data Year	8-Hour Average ug/m <sup>3</sup>					1-Hour Average ug/m <sup>3</sup>			
	1 <sup>st</sup> Highest	2 <sup>nd</sup> Highest	SIL	Air Quality Monitoring Exemption Level	NAAQS	1 <sup>st</sup> Highest	2 <sup>nd</sup> Highest	SIL	NAAQS
1982	416.88	289.20	500	575	10,000	625.00	555.22	2,000	40,000
1983	357.07	339.75	500	575	10,000	718.49	604.04	2,000	40,000
1984	436.19	337.26	500	575	10,000	606.13	569.18	2,000	40,000
1985	472.62	445.46	500	575	10,000	781.67	717.37	2,000	40,000
1986	364.40	304.44	500	575	10,000	571.38	430.62	2,000	40,000

The predicted impacts due to the source wide CO emissions, including the emission rates corresponding to the proposed CO emission limits for the reduction/annealing

furnaces (at the time that the analysis was performed, this limit was 2.8 pounds of CO per ton of semi-finished steel powder processed), are below the SILs and the air quality monitoring exemption level. Therefore, the CO emission limits of 1.0 pound of CO per ton of semi-finished steel powder processed would also be below the SILs and the air quality monitoring exemption level.

The SILs are ambient air concentration thresholds below which the regulatory agencies consider impacts on ambient air to be insignificant. Therefore, the proposed adjustments to the CO emission limits for reduction/annealing furnaces RF-1 and RF-2 result in insignificant impacts on ambient air quality. The predicted impacts on ambient air for CO are also well below the NAAQS for the two averaging periods. Therefore, the conclusions of the ambient air quality analysis performed for the previously submitted PSD construction permit application that the impacts on ambient air quality are insignificant remain unchanged.

- (c) Several considerations were made for CO control technologies as a supplement to the BACT Analysis provided in the original PSD construction permit application. As a first step, the EPA's RACT/BACT/LAER Clearinghouse (RBLC) information system database was accessed and reviewed to determine if it contained any listing for steel powder reduction/annealing furnaces and CO control. No listings were found for these types of units in any part of the country. Both of the reduction/annealing furnaces are radiant-tube, natural gas-fired, continuous roller hearth furnaces. A search was also made on the database for any listing for roller hearth furnaces and CO control. No listings were found for these types of units in any part of the country.

Next, considerations were made of available CO control technologies. The reduction/annealing furnaces are equipped with hydrogen burn-off stacks in the furnace roofs through which furnace off-gas containing hydrogen is discharged into canopy hoods which are ducted to the furnace stacks. The hydrogen burn-off stacks provide some CO control prior to the discharge of furnace off-gas to the canopy hoods. The hydrogen burn-off systems at the furnaces are designed for the combustion of hydrogen prior to the discharge of furnace off-gas into the canopy hoods to prevent combustible/explosive concentrations of hydrogen in the off-gas handling system. These systems are not specifically designed for combustion of CO although some combustion of CO occurs with the combustion of the hydrogen.

Two technologies for the control of CO from combustion sources, with potential application to steel powder reduction/annealing furnaces, are commercially available: (1) afterburners, and (2) catalytic oxidizers. Both of these technologies are post-combustion, "end-of-pipe" air pollution control technologies.

- (1) Afterburners  
For the effective oxidation of CO to CO<sub>2</sub>, the gas stream must be held at a

temperature between approximately 1,350° to 1,550°F for a residence time between approximately 0.3 to 0.5 seconds in the presence of sufficient oxygen. Depending on the CO concentrations and oxygen concentrations, these conditions result in CO destruction efficiencies between 90 and 99 percent. The gas stream temperatures at the reduction/annealing furnaces' stacks at this source, as measured during the June 1998 stack tests, are approximately 525°F at Stack No. 4 (RF-1) and 322°F at Stack No. 5 (RF-2). Therefore, the exhaust gas streams at the two furnaces would require significant reheating for effective CO control by afterburning. It is calculated that the natural gas heat input requirements for reheating the furnace off-gas streams to a temperature of 1,450°F at the two furnaces would be approximately 13.3 MMBtu per hour at RF-1 and 25.0 MMBtu per hour at RF-2. These additional fuel requirements are well in excess of the maximum rated heat input capacities of the furnaces. In addition, increased consumption of natural gas for afterburning would result in increased NOx emissions.

A cost analysis was performed to determine the economic feasibility of installing an afterburner system on the two furnaces. The cost analysis was based on potential CO emissions of 26.3 tons per year from RF-1 and 21.9 tons per year from RF-2. These were based on the revised CO emission limit for each furnace of 1.0 pounds per ton of product input. The costs were tabulated for two types of thermal afterburner systems: without heat recovery and with 70 percent heat recovery.

The results of the cost analysis are presented below.

#### Evaluation

Option	Potential Emissions (tons/yr)	Emissions Removed (tons/yr)	Control Efficiency (%)	\$/ton Removed
RF-1 without HR	26.28	23.65	90	\$119,860
RF-1 with 70% HR	26.28	23.65	90	\$51,078
RF-2 without HR	21.90	19.71	90	\$121,063
RF-2 with 70% HR	21.90	19.71	90	\$53,502

#### Methodology:

Emissions removed = (potential emissions from furnace) \* (control efficiency)

\$/ton removed = total annual cost / emissions removed

The cost breakdown is as follows:

- (1) Capital Cost
  - (a) Base price: purchase price, auxiliary equipment, instruments, controls, taxes and freight.
  - (b) Direct installation cost: foundations/supports, erection/handling, electrical, piping, insulation, painting, site preparation and building/facility.
  - (c) Indirect installation cost: engineering, supervision, construction/filed expenses, construction fee, start up, performance test, model study and contingencies.
- (2) Annual Cost
  - (a) Direct operating cost: operating labor (operator, supervisor), labor and material maintenance, operating materials, utilities (electricity, gas).
  - (b) Indirect operating cost: overhead, property tax, insurance, administration and capital recovery cost (for 7 years life of the system at 7% interest rate).

The results of the cost analysis indicate that use of a thermal afterburner system on each furnace is economically infeasible. Therefore, considering the cost analysis, the estimated CO control efficiencies of the furnaces, and the insignificant impacts of the proposed CO emission limits on ambient air as demonstrated in the ambient air analysis presented above, installation of the afterburners at the reduction/annealing furnace are considered to be unnecessary based on energy and environmental considerations.

(2) Catalytic Oxidation

This technology uses catalysts to lower the temperature required to oxidize CO to CO<sub>2</sub>. The catalysts used in this process are highly susceptible to poisoning by metallic and other inorganic elements, all of which are present in trace quantities in the steel powder processed at the reduction/annealing furnaces. Therefore, this control technology would be technically infeasible.

In summary, based on energy and environmental considerations, installation of the two "end-of-pipe" technologies for CO control at the reduction/annealing furnaces are not considered to be BACT for these furnaces nor are such controls necessary to protect ambient air quality. Therefore, BACT for the two (2) reduction/annealing furnaces will be the limit on CO emissions of 1.0 pounds of CO per ton of semi-finished product input for each of the reduction/annealing furnaces (RF-1 and RF-2). This limit and the operation conditions in the existing PSD permit (CP-071-2546-00110), except Operation Conditions 10b and 11b which will be revised through this Part 70 Significant Source Modification, will satisfy the requirements of 326 IAC 2-2 (PSD) for RF-1 and RF-2.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

**Compliance Requirements**

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous

compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

There are no compliance monitoring requirements applicable to this modification.

### **Air Toxic Emissions**

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Part 70 Application Form GSD-08.

None of the listed air toxics will be emitted from this modification.

### **Conclusion**

The operation of this metal powder manufacturing operation shall be subject to the conditions of the attached proposed **Significant Source Modification No. 071-12450-00016**.

## Appendix A: Emission Calculations Summary

**Company Name:** Kobelco Metal Powder of America, Inc.  
**Address City IN Zip:** 1625 Bateman Drive, Seymour, Indiana 47274  
**Source Modification No.:** 071-12450  
**Plt ID:** 071-00016  
**Reviewer:** Trish Earls  
**Date:** April 28, 2000

Emissions Increase from Modification (tons/year)			
Emissions Generating Activity			
Pollutant	RF-1 and RF-2 Future Potential Emissions	RF-1 and RF-2 Current Actual Emissions	TOTAL
PM	0.00	0.00	0.00
PM10	0.00	0.00	0.00
SO2	0.00	0.00	0.00
NOx	0.00	0.00	0.00
VOC	0.00	0.00	0.00
CO	48.18	26.26	21.92
total HAPs	0.00	0.00	0.00
worst case single HAP	0.00	0.00	0.17
Total emissions based on rated capacity at 8,760 hours/year. Since this is a PSD source,			
total emissions are equivalent to the future potential emissions minus the average actual emissions			
from the last two years, 1998 and 1999.			
RF-1 and RF-2 actual emissions based on average steel throughputs during 1998 and 1999.			

**Appendix A: Emissions Calculations**

**Company Name:** Kobelco Metal Powder of America, Inc.  
**Address City IN Zip:** 1625 Bateman Drive, Seymour, Indiana 47274  
**Source Modification No.:** 071-12450  
**Plt ID:** 071-00016  
**Reviewer:** Trish Earls  
**Date:** April 28, 2000

Reduction/Annealing Furnace #1								
TYPE OF MATERIAL	Throughput		Control Device: N/A					
	LBS/HR	TON/HR	Control Efficiency: N/A					
Semi-Finished Steel Powder	12000	6.0						
	<b>PM</b> lbs/ton metal charged N/A	<b>PM10</b> lbs/ton metal charged N/A	<b>SOx</b> lbs/ton metal charged N/A	<b>NOx</b> lbs/ton metal charged N/A	<b>VOC</b> lbs/ton metal charged N/A	<b>CO</b> lbs/ton metal charged 1.00	<b>Lead</b> lbs/ton metal charged N/A	
Potential Emissions lbs/hr	0.0	0.0	0.0	0.0	0.0	6.00	0.0	
Potential Emissions lbs/day	0.0	0.0	0.0	0.0	0.0	144.00	0.0	
<b>Potential Emissions tons/year</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>26.28</b>	<b>0.0</b>	
Notes: See Appendix A, page 4, for PM, PM10, NOx, and SOx emission calculations. The CO emission factor is based on stack tests performed on the furnace on June 30, 1998, and represents emissions from natural gas combustion and decarburization of the steel powder.								

  

Reduction/Annealing Furnace #2								
TYPE OF MATERIAL	Throughput		Control Device: N/A					
	LBS/HR	TON/HR	Control Efficiency: N/A					
Semi-Finished Steel Powder	10000	5.0						
	<b>PM</b> lbs/ton metal charged N/A	<b>PM10</b> lbs/ton metal charged N/A	<b>SOx</b> lbs/ton metal charged N/A	<b>NOx</b> lbs/ton metal charged N/A	<b>VOC</b> lbs/ton metal charged N/A	<b>CO</b> lbs/ton metal charged 1.00	<b>Lead</b> lbs/ton metal charged N/A	
Potential Emissions lbs/hr	0.0	0.0	0.0	0.0	0.0	5.00	0.0	
Potential Emissions lbs/day	0.0	0.0	0.0	0.0	0.0	120.00	0.0	
<b>Potential Emissions tons/year</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>21.90</b>	<b>0.0</b>	
Notes: See Appendix A, page 5, for PM, PM10, NOx, and SOx emission calculations. The CO emission factor is based on stack tests performed on the furnace on June 30, 1998, and represents emissions from natural gas combustion and decarburization of the steel powder.								



## Page 3 of 3 TSD App A

**Date:** April 28, 2000

Reduction/Annealing Furnace #1								
TYPE OF MATERIAL	Average Actual Throughput for 1998 and 1999			Control Device:		N/A		
	LBS/YR			TON/YR		Control Efficiency:		
Semi-Finished Steel Powder	56050000			28,025				
	<b>PM</b> lbs/ton metal charged N/A	<b>PM10</b> lbs/ton metal charged N/A	<b>SOx</b> lbs/ton metal charged N/A	<b>NOx</b> lbs/ton metal charged N/A	<b>VOC</b> lbs/ton metal charged N/A	<b>CO</b> lbs/ton metal charged 0.347	<b>Lead</b> lbs/ton metal charged N/A	
Actual Emissions lbs/hr	0.0	0.0	0.0	0.0	0.0	1.11	0.0	
Actual Emissions lbs/day	0.0	0.0	0.0	0.0	0.0	26.64	0.0	
<b>Actual Emissions tons/year</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>4.86</b>	<b>0.0</b>	
Notes: See Appendix A, page 4, for PM, PM10, NOx, and SOx emission calculations. The CO emission factor is based on stack tests performed on the furnace on June 30, 1998, and represents emissions from natural gas combustion and decarburization of the steel powder.								

  

Reduction/Annealing Furnace #2								
TYPE OF MATERIAL	Average Actual Throughput for 1998 and 1999			Control Device:		N/A		
	LBS/YR			TON/YR		Control Efficiency:		
Semi-Finished Steel Powder	56958000			28,479				
	<b>PM</b> lbs/ton metal charged N/A	<b>PM10</b> lbs/ton metal charged N/A	<b>SOx</b> lbs/ton metal charged N/A	<b>NOx</b> lbs/ton metal charged N/A	<b>VOC</b> lbs/ton metal charged N/A	<b>CO</b> lbs/ton metal charged 1.503	<b>Lead</b> lbs/ton metal charged N/A	
Actual Emissions lbs/hr	0.0	0.0	0.0	0.0	0.0	4.89	0.0	
Actual Emissions lbs/day	0.0	0.0	0.0	0.0	0.0	117.27	0.0	
<b>Actual Emissions tons/year</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>21.40</b>	<b>0.0</b>	
Notes: See Appendix A, page 5, for PM, PM10, NOx, and SOx emission calculations. The CO emission factor is based on stack tests performed on the furnace on June 30, 1998, and represents emissions from natural gas combustion and decarburization of the steel powder.								